



Eradication of Japanese Beetle In Utah

Astro[®] An Adult Insecticide - Questions and Answers



What threat does the Japanese beetle pose to Utah and my neighborhood?

Japanese beetle (*Popillia japonica*) is a serious invasive insect pest threatening to invade western North America. Japanese beetle adults feed on the flowers, fruit and foliage of over 300 species of plants. The larvae attack the roots of turf and other plants. Both adults and larvae cause significant damage in the eastern U.S. where pesticides are often used to protect flowers, ornamental plants, trees, vegetable and fruit crops, and turf. Like other western states, Utah has a statewide trapping program that every year seeks to detect quickly any introductions of this pest.

Japanese beetle has been detected in this area. If not eradicated, Japanese beetle will relentlessly spread throughout Utah and the West. Effective eradication programs have required the use of pesticides to control both the adult and larval stages. Two to three years of applications are often needed to eradicate isolated pest populations. Extensive efforts are underway by western states, industry and the U.S. Department of Agriculture to prevent further introductions of Japanese beetle into the West.

What is Astro[®] Insecticide?

Astro[®] is the trade name for a product that contains an insecticide called permethrin. This product is used on agricultural crops, and in urban settings. Astro[®] is a synthetic pyrethroid insecticide that kills insects by contact and by stomach poison action. Pyrethroids are commonly used to control a variety of chewing and sucking insects, including the Japanese beetle. Astro[®] controls crawling, and flying insect pests on garden plants including fruits and vegetables. It can also be applied to outdoor building surfaces and is used to control fleas and ticks on residential lawns, and is used to kill ticks and head lice. Products containing permethrin are also common insect repellants.

How will Astro[®] be applied?

The Evercide[®] EC used in the Japanese beetle eradication program will be mixed with water. The spray mixture will be at rates shown on the product label. The Astro[®] mixture will be applied by ground spray equipment operated by a licensed commercial pesticide applicator under the direct supervision of the Utah Department of Agriculture and Food. The spray will be applied to all trees, shrubs, flowers, weeds, turf and garden plants that can serve as food or resting places for the Japanese beetle within the treatment boundaries.

How often will Astro[®] be applied?

Astro[®] breaks down rapidly in the environment, and within about two weeks is no longer expected to be effective against the Japanese beetle. The first application will be made as soon as possible to kill beetles flying into the area or emerging during the summer adult flight period. Based upon the beetle's life cycle several other Astro[®] EC applications may occur at bi-weekly intervals.

Will Astro[®] injure the foliage of plants?

Astro[®] has been tested on a wide range of ornamental plants under various environmental conditions and no damage to outdoor plants has been observed.

Is Astro[®] harmful to humans or their pets?

Researchers use animal studies to characterize the potential for a pesticide to cause harmful effects to human health. It is important to know that these tests are carried out with very high doses so that toxicity (poisoning) can be observed. Effects seen at toxic doses in animals are unlikely to occur in humans after any brief exposure to the spray application proposed for the Japanese beetle spray program. The level of exposure must be considered to estimate the risk of harmful effects.

Permethrin has been shown to be more toxic to children than to adults. The U.S. Environmental Protection Agency has classified permethrin as a carcinogen because it causes lung tumors in female mice and liver tumors in mice of both sexes. Permethrin inhibits the activity of the immune system in laboratory tests, and also binds to the receptors for a male sex hormone. It causes chromosome aberrations in human and hamster cells.

When applied according to the label instructions, the available toxicology information indicates that application of permethrin (the active ingredient in Astro[®]) should not pose a risk to human health or to pets.

How can I avoid exposure to Astro[®] during the Japanese beetle eradication program?

Application to each residence should take less than half an hour. To minimize personal exposure, stay indoors during the application and keep your pets indoors. You and your pets may freely use your yard when the foliage has dried. The following precautions are recommended to minimize your exposure:

1. Close all windows and turn off or adjust your window air conditioner so it does not draw air from outside during the Astro[®] application. Since application may begin early in the morning, you may wish to make these changes the night before the application date.
2. Move lawn furniture, children's and pet's toys indoors before the application. If this is not possible, wash all surfaces with soap and water after the application. Wear chemically resistant gloves (neoprene or nitrile) when washing these items. Try to avoid using excessive water that might remove the pesticide from the nearby turf and foliage keeping it from killing Japanese beetles.
3. Keep family members and pets indoors during the application on your or neighboring properties to limit exposure to spray. Wait until the treated plants and grass are dry before allowing family members and pets to use your yard. You may smell an odor until the Astro[®] has dried. Encourage careful handwashing.
4. Avoid contact with wet Astro[®] mixture on your skin and eyes. If contact is made, wash the affected skin thoroughly with soap and water. If the material should get into your eyes, flush your eyes with clean water for 15-20 minutes.
5. Get medical attention or contact the poison center (1-800-222-1222) if irritation continues.

Will Astro® cause harmful effects to other organisms or to the environment?

Permethrin is considered moderately toxic to mammals, and of low toxicity to birds. It is not likely to affect either of these groups when applied at the rates used in the Japanese beetle eradication program. Permethrin is highly toxic to many beneficial insects including honeybees. However, the areas to be treated are small, the amount of permethrin is low, and any possible harm to beneficial insects by the program will be very localized. Permethrin is highly toxic to fish and aquatic insects. For that reason, application is prohibited over water; there will be no spraying over water in this program. As permethrin has very low water solubility and is very immobile in soil, contamination of ground and surface water is unlikely. However, precautions will be taken to ensure that there is no spray drift into surface water.

For Further Information:

Contact the National Pesticide Information Center (NPIC), 1-800-858-7378, <http://npic.orst.edu>, or email: npic@ace.orst.edu. NPIC is a toll-free information service sponsored cooperatively by Oregon State University and the U.S. Environmental Protection Agency. NPIC provides objective, science-based information about a wide variety of pesticide-related subjects including pesticide products, pesticide poisonings, toxicology, and environmental chemistry.

Continuing Health Concerns?

If you have health-related questions or concerns, contact your physician (or veterinarian for your pets). No health effects are expected to occur among residents; however, if a resident feels an adverse health effect has occurred because of this program, please contact your physician the same day to establish whether it is related to the Astro® application. Your physician may consult with Scott Everett - (801)536-4117, severett@utah.gov, a toxicologist with the Utah Department of Environmental Quality, who is familiar with permethrin and its effects, or Wayne Ball - (801)538-6297, wball@utah.gov, a Health Program Manager with the Utah Health Department, or the Utah Poison Center (1-800-222-1222) in the event of a medical emergency.

For more information about Japanese beetle and this eradication program, visit the Utah Department of Agriculture and Food's web site at <http://ag.utah.gov/pressrel/JBInfoPage.html>, the Orem City web site at <http://orem.org/>. If further information is needed contact Utah State Extension's Adrian Hinton at (801)851-8460 or adrianh@ext.usu.edu, or Utah Department of Agriculture and Food's Clint Burfitt at (801)538-4912 or cburfitt@utah.gov.